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AUTHOR Conklin, Eleanor
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ABSTRACT

Perception, problem solving, and memory provide the focus of an applied learning techniques/study skills course offered at Marist College (Poughkeepsie, New York). The unit on perception provides a discussion of the dynamics of verbal and nonverbal communication and suggests specific strategies to improve these functions. The student learns when, how, and why to ask questions that facilitate the learning process. The problem solving unit goes beyond perception in demonstrating to the student how information is processed in different patterns according to the perceived problem. While perception clarifies a perceptual set, the problem solving tries to encourage altering that set to form a more efficient one. The last unit, memory, brings all the functions together: perception of the environment, patterning of the environment to fit the particular problem, and the retention and retrieval of this information at a later date. To ensure that the techniques taught and practiced in the course are transferred to other classes, student assistants are used. In addition to supervising ten students each, their duties include notetaking, time management, and grading homework. They also attend each class and help organize and run group activities. An evaluation of the course at the end of two semesters revealed no decline in the grade point average of those students who took the course, indicating that transferable learning abilities may have been improved. (HOD)

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APPLIED LEARNING TECHNIQUES:

A Program for Student Academic Development

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Prepared by: Eleanor Conklin
Director
The Learning Center
Marist College
Poughkeepsie, N.Y. 12601

(914) 471-3240 (X-160)

The data received from our Freshman Survey Program indicated that large numbers of entering freshmen did not have positive academic orientation or effective study techniques.[1] In surveying the literature produced to remedy these deficiencies and in observing Study Skills Laboratories at other colleges, it became apparent that the "attack" on study skill deficiencies[2] was coming from th wrong end. Instead of asking what was going on in the students' cognitive functioning that produced learning difficulties, most programs aimed at the observable studying behavior. Advice to "sit in a well lighted place; avoid distractions; take organized notes, etc." dealt only with the last part of a complicated cognitive process. As a consequence, students were bombarded with heuristic devices such as SQ3R, without really being told why or how these techniques were supposed to work. Also no allowance was made for differences in teaching or learning styles in any of the existing methods.

So there were a number of interrelated problems: how to design a program that included learning theory (physical and psychological information concerning cognitive functioning); how to develop strategies to improve individual functioning, and how to provide the student with an opportunity to practice these strategies. Perhaps the most important problem was how to design a program that would not be restricted just to the remedial student, but to offer a program that would help anyone to improve his/her natural learning ability, whatever the present level.

Applied Learning Techniques, a credit bearing course given by the Learning Center, accomplished all of the goals described above. The course is designed to follow the physical act of knowing: first, the perception of the environment; second, the sorting of patterning of this environment; third, the retrieval and application of the re-structured information back to the environment. Although the integration of the functions is stressed, the process is studied with an emphasis on the following areas: Perception, Problem-Solving, and Memory.

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Perception considers the physical act involved in comprehending the environment and explores the influence of personality, culture, and general life experience upon our natural organizing ability. Perceptual set is discussed, leading to the possibility that if we have individual life experiences that force our perception into set patterns, then perhaps we all have individual ways of learning and using information. Students take the Locus of Control and the Embedded Figures test to begin to understand their own way of looking at the world. Just to have students realize that there are natural and extensive differences in learning styles (and teaching styles) seems to have a positive effect on the way they behave in a classroom situation. One student who began by saying, "The teacher's job is to teach me--it's up to him" ended the course truly amazed at the power of verbal and non-verbal behavior in controlling the amount of learning that goes on during a teaching session.

A lesson from the unit on Perception (Fall, 1980 syllabus) would proceed in this way: using a portable camera, the technician from the Media Center comes into one of the first classes, where a guest instructor is lecturing on faculty perceptions. "What pre-conceived ideas do veteran faculty have concerning their freshmen students on the first day of class?" The camera records the students' immediate attention--they like this opening line, so they sit up, lean forward, their eyes on the speaker. Further on in the lecture, a student is caught looking at the clock. Another student doodles and looks visibly bored, slouching in his chair. At the end of the one hour lecture, questions are asked, and the camera records the fact that no one remembered all the information, and hardly anyone took notes. Whatever notes are written are collected, to be compared to notes taken and graded at the end of the unit.

This lesson is the prelude to a discussion of everything that happends in a classroom, beginning with what we attend to and what we do not attend to. It provides a motivational introduction to a discussion of the dynamics of verbal and non-verbal communication, and when specific strategies are given to improve these natural functions, the student is much more apt to change his/her behavior in the classroom. He learns, for example, how to take organized and productive lecture notes that take into consideration the teaching style of his instructors as well as the way the student himself processes the information. He learns when, how, and why to ask questions that facilitate the learning process. Other specific applications concern the areas of reading and writing, speaking and listening skills outside the classroom.

The Problem Solving Unit goes beyond perception in demonstrating to the student how information is processed in different patterns according to the perceived problem. In this unit we are interested in individual differences only to show the contrast with the "best" or expert way to solve problems. Perception clarifies perceptual set; problem solving tries to encourage altering that set to form a more efficient one.

The theories and strategies used in this section are adapted from Intelligence Can Be Taught, by Arthur Whimbey, and we use the textbook, Problem Solving and Comprehension, by Arthur Whimbey and Jack Lochhead. In this book, students are trained how to objectify their cognitive functioning by verbalizing the process in minute detail to a partner, who writes down each step. These steps are then compared to the process used by an expert, and the student diagrams the points of contrast. The problems are deliberately simple, and the student is encouraged to concentrate on the process, not the answer--a very difficult requirement for our product oriented students. In order to show that the process in solving simple problems is similar to the process used in solving more difficult ones, four faculty members study the processes underlying their particular disciplines and design problems for the students similar to the ones used in their classes. The student learns the best way to solve problems dealing with the use of hypotheses, used primarily in the sciences; he/she learns procedures for solving problems that deal with patterns and trends, used in business courses; the student learns strategies to use in solving syllogistic reasoning problems used in math and computer science courses; and the student works with creative problem solving specifically related to writing skills.

In the last unit, Memory, we try to bring all the functions together: perception of the environment, patterning of this environment to fit the particular problem, and now the retention and retrieval of this information at a later date. The practical end result is, of course, the immediate reward of a good grade on final exams.

The textbook used in this section is Improving Your Memory, by Laird Cermak, and the major vehicle is the information processing model. We related back to perception, now concentrating on ways to improve attention. Short term memory and long term memory are discussed, and strategies are given and practiced to improve each one of these functions.

During the two weeks before final exams, students attend workshops where they bring all the material they have collected from each course: class notes, book notes, old exams, and information from the instructors consisting of time, place, and type of exam. Each student is helped to consolidate important information into the smallest packages possible, then they are given memorizing techniques applicable to the material. For example, strategies used to improve visual memory are used on remembering charts and graphs. Each one is drawn on an index card in different colors or textures, and students are encouraged to carry these cards around with them to study when they have unexpected free time sequences.

To ensure that techniques taught and practiced in the ALT classroom are transferred to other classes, Student Assistants are used. These upper class students each have supervision of ten students, meeting with them for an hour each week outside of class. Their duties cover notetaking, time management, and the grading of homework; they give 25% of the final grade. The S.A.s

also attend each ALT class and help organize and run group activities. It is very good experience for them, and it has helped two graduating seniors obtain professional positions in the teaching field.

Through ALT, students are required to spend one hour a week outside of class improving some academic skill. Learning Center staff members have designed developmental mini-courses in math anxiety, reading, writing, and independent study. Students earn another 25% of their grade just by attending and doing the work. The final 50% of their grade is determined by their grades on three major examinations, designed to be similar to the type they will experience at Marist (professors from various disciplines help develop these questions).

At this time, the ALT course is applied directly to students who evidence learning difficulties at college, but there is no reason why a person at any level of learning could not benefit. The theory would remain the same; the strategies and applications may differ--as in fact they do now, for different individuals. Several Student Assistants have applied the techniques of problem solving to their own problems--in one instance a senior improved his score on the G.R.E.s after participating in the problem solving sessions with the freshmen.

Besides the major goals, several other benefits of the course were realized. From the beginning, it was viewed as the hub of a wheel, with spokes running out in all directions to all areas of the college. One of the major areas concerned counseling. Students are required to visit the Counseling and Career Development Offices to have individual interpretations of their freshmen surveys done (Omnibus Personality Inventory, Career Interest Inventory, Brown's Survey of Study Habits and Attitudes). In this way the students became much better informed about the purposes of counseling; they also became more at ease with the counselors and saw them as more integrated, more involved in the general scheme. The counselors are also involved in tutor and Student Assistant training sessions.

The Director of the Media Center has become involved with the course through the designing of our own videotape programs. Commercial progtams, particularly those in reading, either ignored the process of reading or contained mediocre content. Using textbooks from the core courses as examples, we have designed an individualized reading program using workbooks and videotapes. It has gone through two semesters of field testing, and it is now ready for final revisions. A computer assisted program in problem solving, to supplement the rather short instruction in the course, has also been put into proposal form.

Faculty development is another unexpected bonus of the course. The faculty members teaching units are very interested in improving their knowledge of cognitive functioning as it impacts their discipline and their teaching styles. They get together periodically to discuss integration of the units, and one of them said recently, "We've always seen the need for interdisciplinary communication, but it's never happened until now." We hope their interest and enthusiasm will carry over to their colleagues.

The first year of the course (Fall, 1979, Spring 1980) was exciting, exhausting, and extraordinarily successful. Dr. Martha Maxwell, founder and director of the Student Learning Center at the University of California, Berkley, served as one of our consultants. In her report on the Fall, 1979 Semester, she writes, "In view of the characteristic of the students who are required to take the ALT course--thay is, they represent the highest academic risks--students with weak skills and poor preparation for college--it is remarkable that 60% of these underprepared students attained 2.0 grade point acerage or higher their first term at Marist." The highest grade point average that semester was 3.4. At the end of two semesters the grade point average showed very little decline, indicating our real hope--that transferrable learning abilities may have been improved. The next step is a retention study using probationary 1977 freshmen as a control.

September, 1980; revised December, 1981

NOTES

1. for a full description of the Freshman Survey Program see R. Amato, "Freshman Survey Program," Marist College, Poughkeepsie, New York.
2. i.e. Schmeizer. et al., Reading and Study Skills; Langon, Study Skills; Brown's own program for effective prescription: Student's Guide to Effective Study.

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